CHARITABLE GIVING IN THE GREAT RECESSION

An Undergraduate Research Scholars Thesis

by

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Research Advisor: Dr. Jonathan Meer

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ABSTRACT

Income, Wealth, and Charitable Giving

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While we know the aggregate numbers for how charitable giving was affected by the Great Recession in 2007-2009, there is a lack of knowledge on how the recession affected giving on a more individual level. Using the Panel Study of Income Dynamics datasets from years 2001 to 2013, we will examine how the Great Recession affected charitable giving levels. We will use the sum of religious and secular giving for each household to study the changes in giving from year to year based on probability of giving and the percentage change in total giving. We will control for variables such as income, wealth, health, religion, and other changeable demographic variables as well as time invariant factors using fixed effects. We will also look at how income and wealth themselves affect giving, and how religious and secular giving both change individually in similar fashion.

DEDICATIONS

We would like to dedicate this paper to Dr. Jonathan Meer for helping us through all of this and putting up with all of our shenanigans.

ACKNOWLEDGMENTS

The collection of data used in this study was partly supported by the National Institutes of Health under grant number R01 HD069609 and the National Science Foundation under award number 1157698.

We would like to thank Dr. Mark Wilhelm, and his students, especially Xiao Han, of the IU Lilly School of Philanthropy for putting together the majority of the panel data that was used for analysis.

CHAPTER I

INTRODUCTION

The study of philanthropy is increasingly important as the amount of money donated by individuals increases each year. Many organizations, social structures, and people depend on this money. Private charity works with the government and where the government can't or won't. Understanding charitable behavior is even more crucial in economic downturns like the Great Recession because they bring about the unfortunate pairing of an increase in charitable need and a decrease in the ability to fill that need, and events like it can have a lasting impact. It was not until 2014, five years after the Great Recession ended, that aggregate charitable giving caught up to and surpassed the previous record of 2007. (Giving USA)

While we have these aggregate statistics that give us a general picture of what happened to charitable giving during the Great Recession, we do not have a firm grasp on how giving evolved on the individual level during the Great Recession.

For our data, we will use the Panel Study of Income Dynamics, a well-suited data set that tracks individuals and families from the 1960s up until 2015. We only use years 2001 through 2013 since those years have data on charitable giving and family income that we need. The Panel Study gives us the ability to see how different individuals and families reacted to the Great Recession instead of just studying the aggregate data. The main advantage of the panel nature of the data is to compare ordinary least squares regressions and fixed effects regressions. We will distinguish between income and wealth due to their differences in liquidity. We will control for

the housing market in each state. We will discuss how giving is more correlated to income than to wealth, which is likely due to the immediacy of the former. There have been many questions in regards to charitable giving, but without a proper dataset it has been hard to truly find the answers to these pertinent questions. Steinberg et al published a paper with a similar aim; however, their paper, with its focus on inherited wealth as a factor in charitable donations, takes out any families that weren't in the PSID in 1984 as well as families that split due to divorce. They also only use 2005 data whereas this paper takes full advantage of the panel nature of the PSID by using every year that charitable giving data is available. We will make use of the fact that families are tracked over a long period of time in order to eliminate the individual error variable from the relationship between income and giving to better determine propensity to give and go into more depth as to the motivations behind charitable giving. The Steinberg et al paper as well as others will be examined more closely in the literature section following.

We find that the Great Recession did make a significant negative impact on people's giving and possibly still does. Religious and secular giving is both affected albeit in different ways. We find results that correspond with previous research, expanded on in Chapter II. In Chapter III, we discuss specifics of our dataset and the models that we use. In Chapter IV, we show our results and analyze possible explanations. Chapter V is our conclusion.

CHAPTER II

LITERATURE

There are not many economics papers that look at the relationship between income, wealth, and charity. As mentioned earlier the most similar paper to ours the Steinberg et al. paper (2010). They use the PSID as well but only for the year 2005. They also track families back to 1984 in order to study inheritance data, and drop any families that separated due to events like divorce in order to better track inherited wealth. As mentioned in the introduction, this decision limits their ability to make full use of the panel nature of the PSID. Using Goodness of Fit tests, they find that the level of income or wealth isn't necessarily the factor affecting giving—it is the changes in these values, rather than the levels themselves. Additionally, receiving inheritance and home ownership increased giving.

Ficklin (2014) uses data from the Consumer Expenditure Survey and the General Social Survey. The CEX is a project of the Bureau of Labor and Statistics and has data available from 1972-1973 and from 1984 to present. The General Social Survey is a project of the National Opinion Research Center and has been administered as a computer assisted personal interview since 1972. A panel was added in 2006, but data for this paper, only earlier waves were used to determine the relationship between income/giving. Their technique used is primarily OLS regression. She concludes that income confounds charitable giving, and it is lack of grouping that has caused different literature conclusions. She believes the data is helpful to improve charity efficiencies because can target right groups of donors. Low-income donors have lots of money in saving. Race is significant in high group—wealthy minorities give significantly more. High and

middle income giving depend on how the family perceives themselves in terms of wealth. Attending church also seems to have an effect on increasing donations.

James and Sharpe (2007) use Consumer Expenditure survey from 3-year period between the 2nd quarter of 1998 and the 1st quarter of 2001. They use linear regressions, but reject the linear model because of goodness of fit. They focus on the U-shaped income giving profile, for how the data produces this. They conclude that the U-shape is from a small percentage of low-income givers. James and Sharpe, based off of a previous study (Auten et al 2002), give more strength with confirming data. One theory for explaining the U-shape in giving is the low income and highly committed population is made up primarily of retirees. There are concerns with the data in this study, the Department of Labor's Consumer Expenditure Survey, from oversampling wealthy people, as well as their collection methodology, which may underreport income.

List (2011) focuses on studying the market for charitable gifts, crowding out and in by government grants and matching funds, and total amount given as a percentage of GDP. He compares rich and poor, secular and religious, as well as recession and growth. List does this mostly through an analysis of giving patterns through summary data from the IRS and the Giving USA Foundation, which are also largely based on IRS Form 990 data. List finds that charitable giving is tied to market performance but also sticky during market downturns and suggests that it might be tied to social pressure to give. Some of our results have similar implications. He also mentions retirees skewing results since they are giving out of accumulated wealth. Like this paper, he uses PSID COPPS data to study the percentages of who gives.

Wiepking (2007) uses the Giving in The Netherlands Panel Study 2003 to analyze the relationship between giving and income. He divides up the respondents into income groups and controls for education. However, he only uses the proportion of income given to religious causes for the study. He uses two models for this. The first model is for each household, they calculated the price of a charitable donation using the household's marginal tax rate, and is whether a household deducted its philanthropic gifts. The second model used Heckman Two-Stage regression analysis of the natural log of total and religious giving as a proportion of after-tax income. The main conclusion that can be drawn from this study is that there is a persistent negative effect of income on charitable donations as a proportion of income, whether or not one uses total donations or religious donations.

Wiepking and Bekkers (2012) is a literature review of multidisciplinary academic writings on philanthropy. They focus on gender, family composition and income. They focus more on psychological motivations for charitable giving rather than establishing a link using data analysis. The paper concludes that current research does not lead to a clear understanding of the relationship between individual financial position and charitable giving. They write that income stability is probably an inhibitor to giving until the family feels secure financially. The paper does not use any specific data sets and focuses mostly on the effect of tax deductibility on charitable giving.

CHAPTER III

METHODS

We began by compiling variables from the PSID that proved most specific to our analysis of charitable giving. Our total data contained 58179 observations from 8299 individuals with 99 variables over 6 years. This included necessary demographic information, as well as income, wealth, and giving data. Once extracting each individual year of PSID data, we merged the files into a single dataset based on the unique identification number of the head of household. With the use of the panel, we are able to note the changes of giving data for individuals in a remarkably effective way. It should be noted that heads of household might change or drop out and later come back in. For example, a woman may be the head of her household, then get married and no longer be the head as her husband is now the head. We do not think that there are a large enough number of these types of people in the data to present a problem. Also, the fact that the PSID oversamples low-income people might lead to overstatement of the effects of the Great Recession, but again we don't think it will greatly alter the findings of this paper

Using the Consumer Price Index for 2013, we converted all income and giving amounts into 2013 dollars. Any variables that were only specific to a certain year and couldn't aid in our longitudinal analysis were dropped. The income variable used for general tests was the collective family income variable, which encompasses the any type of a household member. Family income was put into thousands (the variable was divided by one thousand) and then divided up into bins at twenty-five thousand dollar increments. A log of income variable was made as well. There are two main wealth variables in the PSID, total wealth with home included

and total wealth without the home included. Both were put into thousands as well. We also created a variable of just home wealth by taking the difference. Wealth with home was divided up into separate bins as well. However since wealth does not affect giving to the same degree income does, the bins were done differently. Total wealth was cut at -4000, then increments of 100 from -100 to 500, then increments of 250 from 750 to 3000, and finally anyone over 3000. This was done so that the wealth gradient could be shown in a more meaningful way since if we cut it more frequently the coefficients of wealth would not be as significant. Wealth is already less meaningful because it's lack of liquidity compared to income.

There are many giving variables in the PSID. We constructed several variables, total giving, a dummy for if they gave at all, and log of total giving, as well as equivalents for secular or religious giving. Religious giving is made of any giving to a religious organization and total secular giving is any giving to nonreligious organizations or causes, it is split up further into different categories like education, arts, etc. Giving can be as low as one dollar. Total giving was made by adding together religious and total secular giving. A dummy variable, gave, was made if a person's giving was greater than zero (that is at least one dollar). We did this for religious and secular giving also. We generated log of giving variables for total, religious, and secular giving.

We also want to control for the housing market since that was one of the biggest factors in the Great Recession. For this we used the All-Transactions Indexes by state, estimated by sales price and appraisal data, from the Federal Housing Finance Agency. We used the fourth quarter data for each year as the housing price variable for that state. We used that variable to create a year-

over-year change in housing value for each state. This is important because not everyone owns a home but the performance of the housing market could still have an effect on one's giving. It also serves as a good indication of which states were most affected by the housing bubble and the crash following.

We focus on two models, ordinary least squares and fixed effects. We run the regressions for the variable "gave", to get change in the probability of giving, and for the log of giving (loggive), to get the percentage change of total giving, which is conditional on giving at all. The first set of regressions we run for both gave and loggive, first with ordinary least squares and then with fixed effects. The controls are ordered as follows:

1. Year
2. Year and income
3. Year, income, and wealth
4. Year, income, wealth, demographics, and state housing price index along with its quadratic
5. Year, income, wealth, and state housing price index along with its quadratic (no demographic controls for number 5).

The demographics used for regression 4 are as follows: the quadratic of age, retired dummy, disabled dummy, health of the head, marital status of the head, couple status of the head, African American head dummy, Hispanic head dummy, sex of head dummy, grad school dummy, high school graduate dummy, college graduate dummy, some college dummy, no high school dummy, number of kids, religious preference of the head, and current state.

We also take the income and wealth coefficients from the third fixed effects regression (year, income, and wealth) for both gave and loggive in order to show how the income and wealth bins affect probability of giving and the log of giving. We run two fixed effects regression in order to compare the probability of religious and secular giving controlling both for year, income, and religious preference of the head of household to see how each type of giving changes over time. Every regression except for the wealth and income coefficient regressions is focused on the year coefficients for that regression. The year coefficients are all compared to 2001, which, it should be noted, was also a recession year although not as severe as severe as the Great Recession.

CHAPTER IV

RESULTS

The results of the regressions generally point towards a latent affect of the Great Recession on the probability of giving. In the ordinary least squares analysis, we see a giving pattern that is consistently in decline. Almost every year in every regression has a smaller coefficient than the preceding year. In other words, every year sees a decline in the probability of giving. The one exception to this is regression 4, which is the only one with controls for demographics. Regression 4 sees an increase in the probability of giving in 2005. Every regression sees about an eight-percentage point drop steadily over the 10 year period. The drop is largest right after the Recession, from 2009 to 2011.

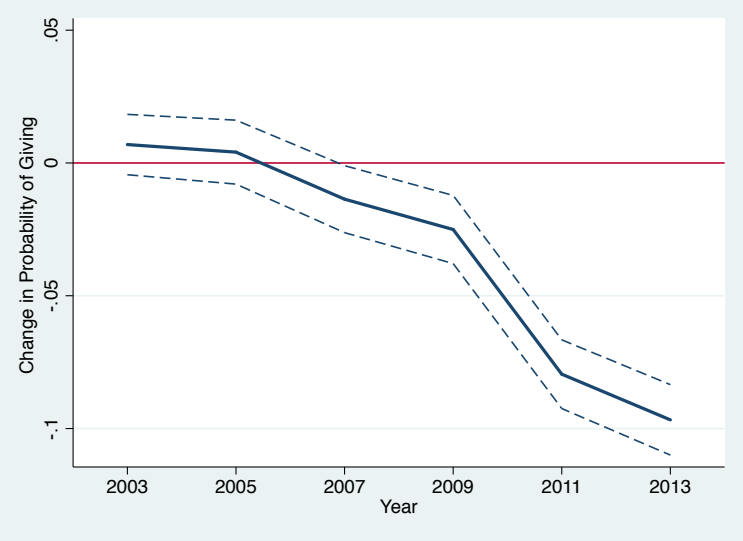

Figure 1.1: OLS, probability of giving

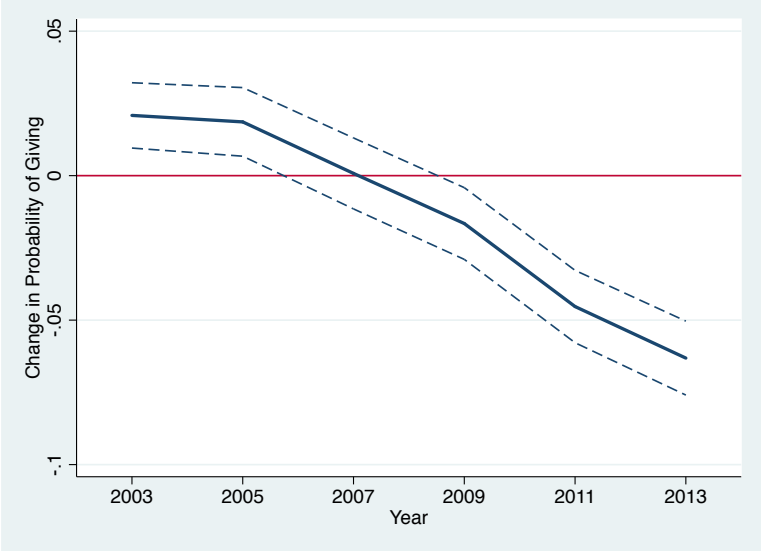

Figure 1.2: OLS, probability of giving

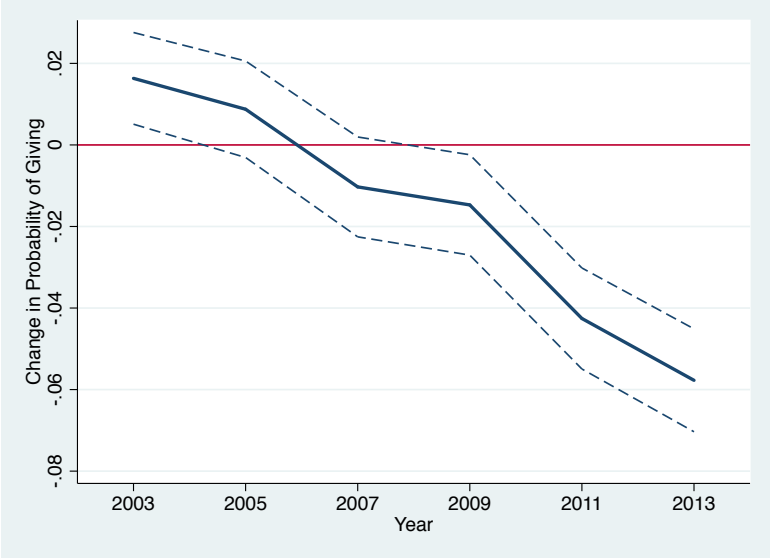

Figure 1.3: OLS, probability of giving

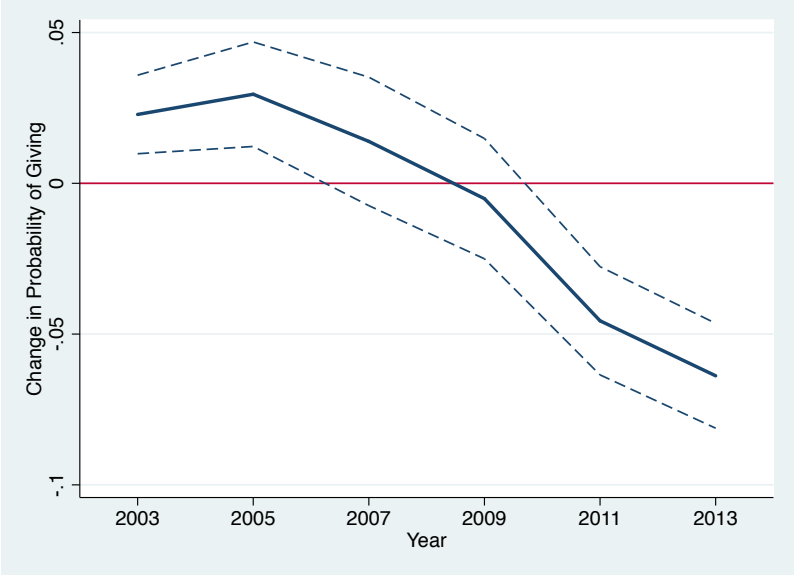

Figure 1.4: OLS, probability of giving

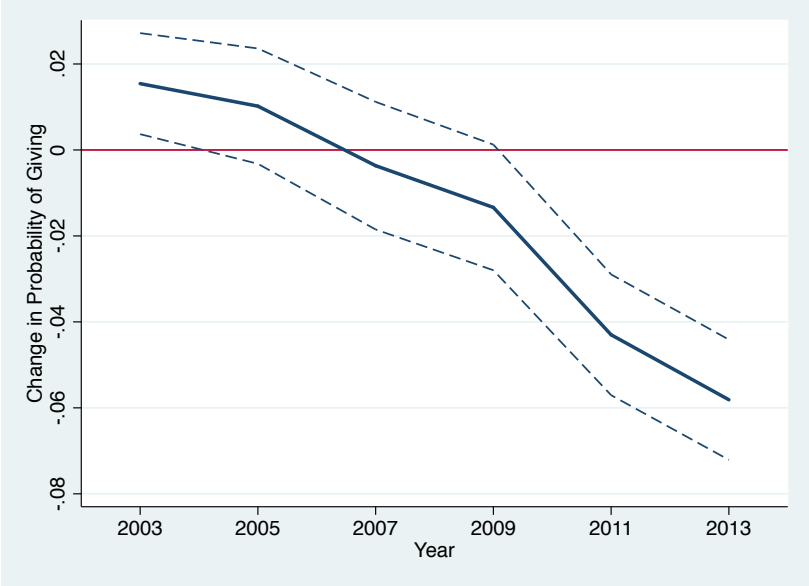

Figure 1.5: OLS, probability of giving

When we run fixed effects the giving pattern flattens out. We see that the drop is roughly half of what it was in the ordinary least squares analysis, and most of it is contained in the 2009-2011 jump. This seems to imply that there was a real latency effect on the decline in giving. People

tried to keep giving through the Recession, and while the downturn stopped, the effects of the Recession were lasting, forcing people to leave the workforce, and also forcing them to stop giving. Most noteworthy is the fifth regression with fixed effects. We see that when controlled for housing price by state, pre-Recession probability of giving drops. This implies that the housing bubble actually had a substantial impact on giving, or if not housing, the bubble in general. This effect is not seen in the ordinary least squares regressions. The fourth regression, which controls for demographics, is almost completely flat but not significant really at all. Fixed effects controls for omitted variable bias, so unobserved factors that are constant within a person are controlled for. Because demographics are mostly constant, fixed effects many of the demographic controls insignificant.

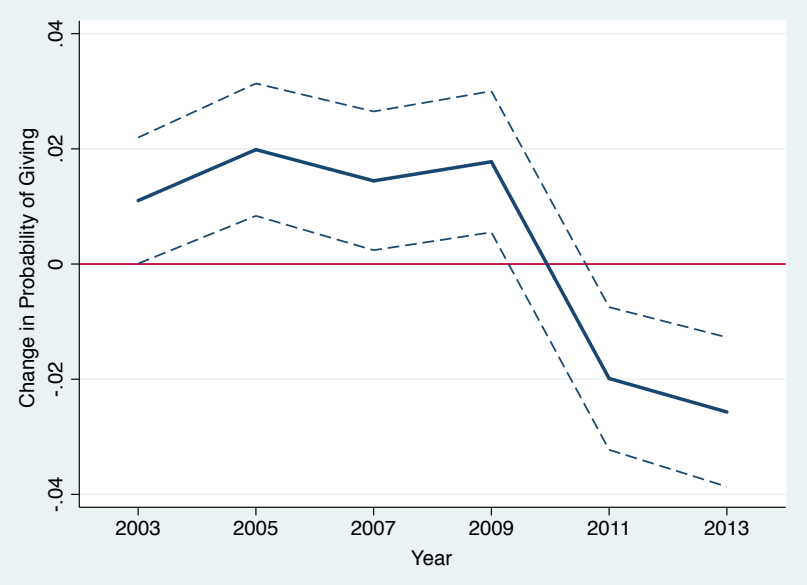

Figure 2.1: Fixed effects, probability of giving

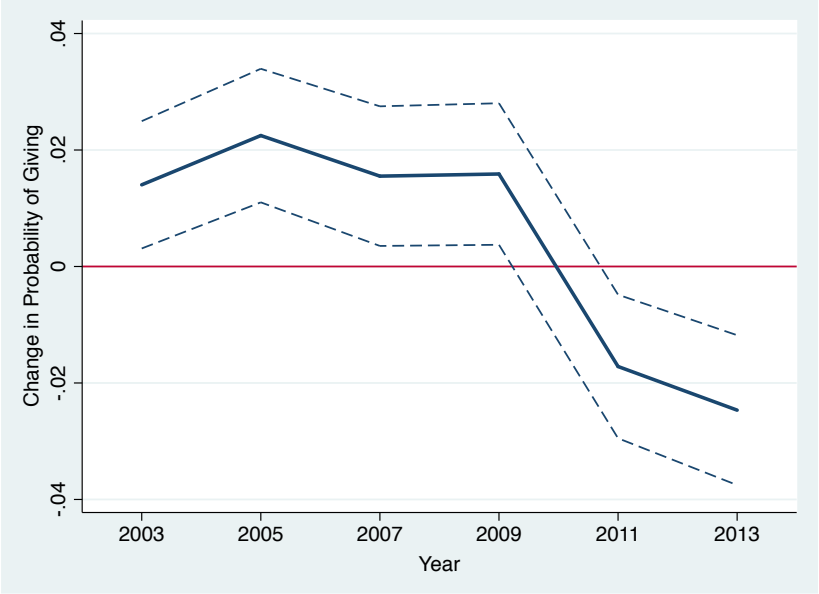

Figure 2.2: Fixed effects, probability of giving

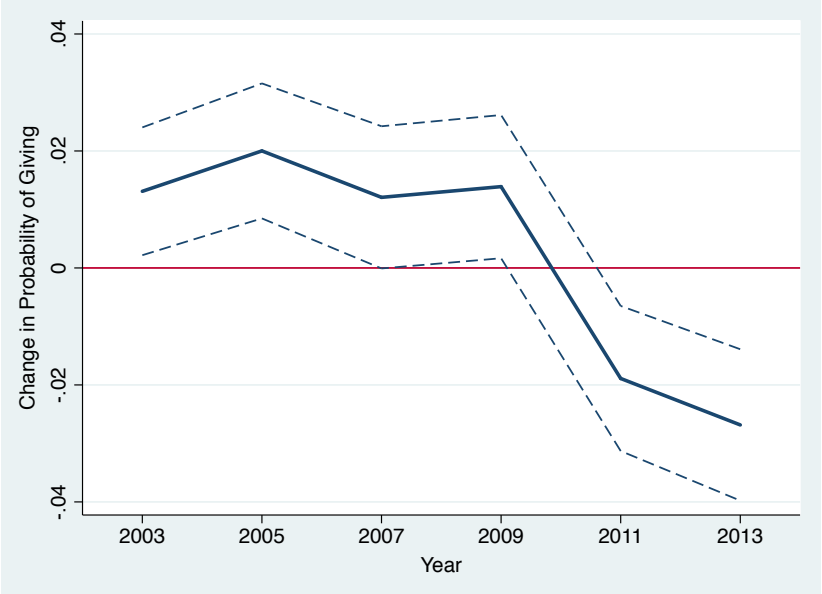

Figure 2.3: Fixed effects, probability of giving

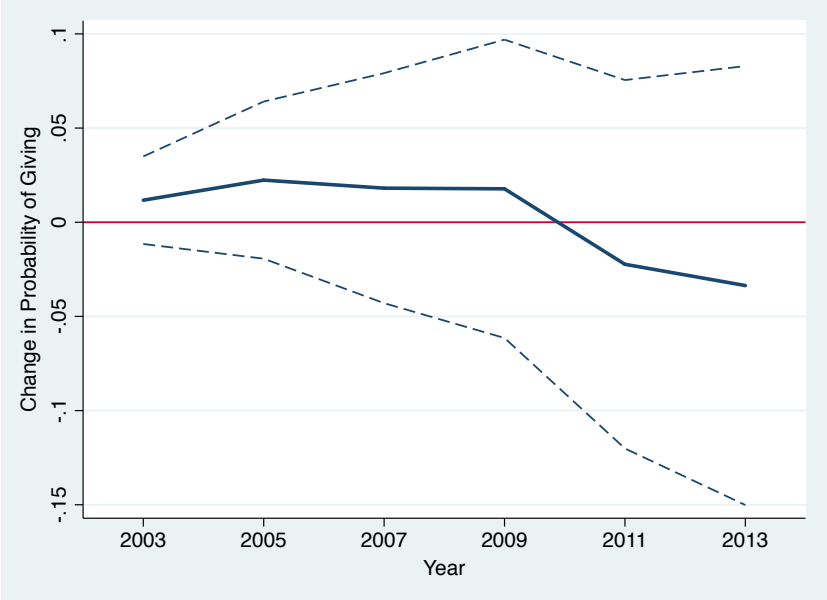

Figure 2.4: Fixed effects, probability of giving

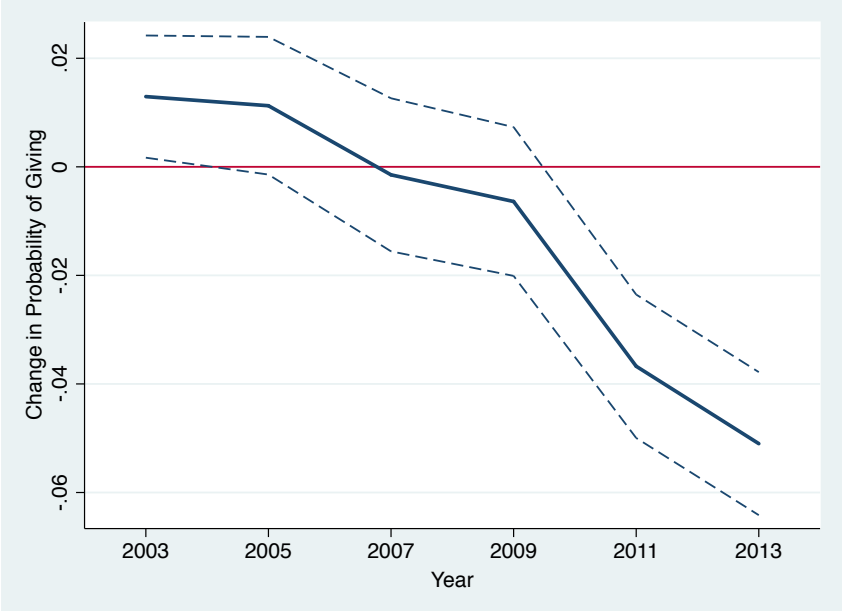

Figure 2.5: Fixed effects, probability of giving

Log of giving stays generally stable through the time period. One problem needs to be noted is that log of giving is conditional on giving at all, and we have already seen that the sample of

people who give changes from year to year. For ordinary least squares, in the first regression, we see a peak in 2005, then a steady drop, with the largest decrease in 2013. Regressions two and three show a giving pattern that decreases during the recession, increases right after in 2011, and then again drops in 2013. When we control for demographics the pattern goes back to like it was in the first regression albeit with more positive coefficients. The fifth regression peaks in 2007, with 2003 and 2013 being about the same. Some of this variance is likely due to the extensive margins changing as people who give less are more likely drop out where as people who give more simply lower their giving levels.

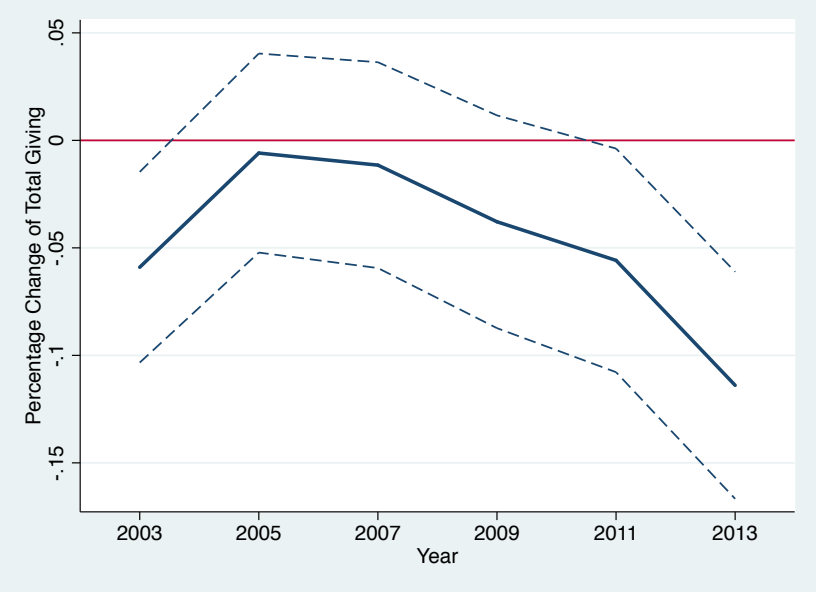

Figure 3.1: OLS, log of giving

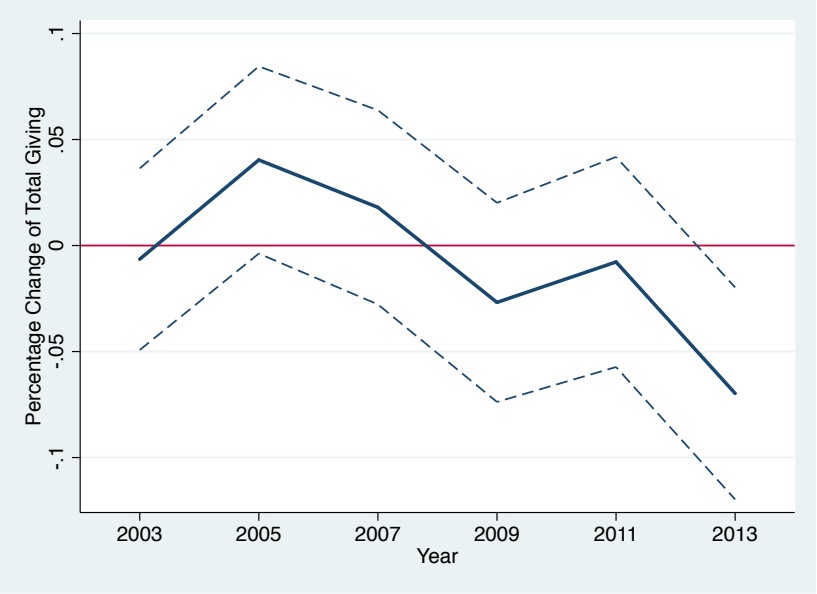

Figure 3.2: OLS, log of giving

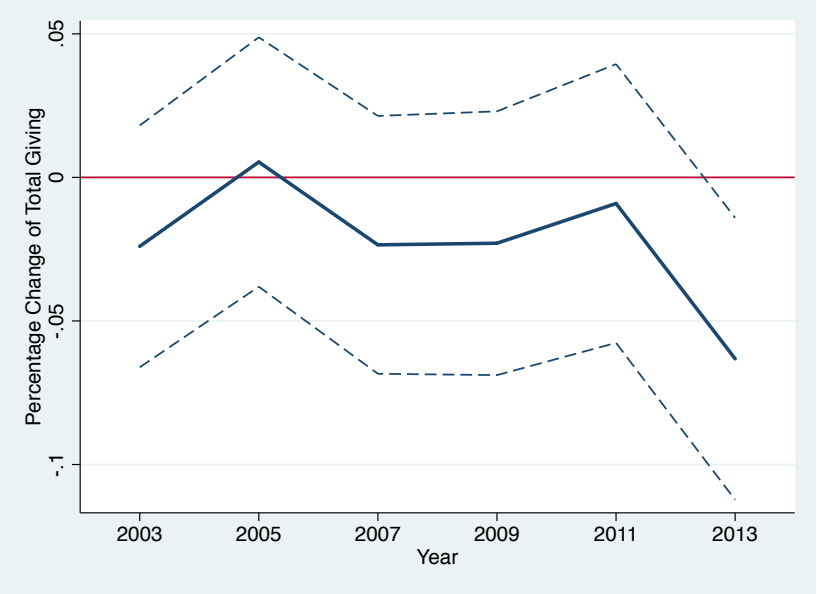

Figure 3.3: OLS, log of giving

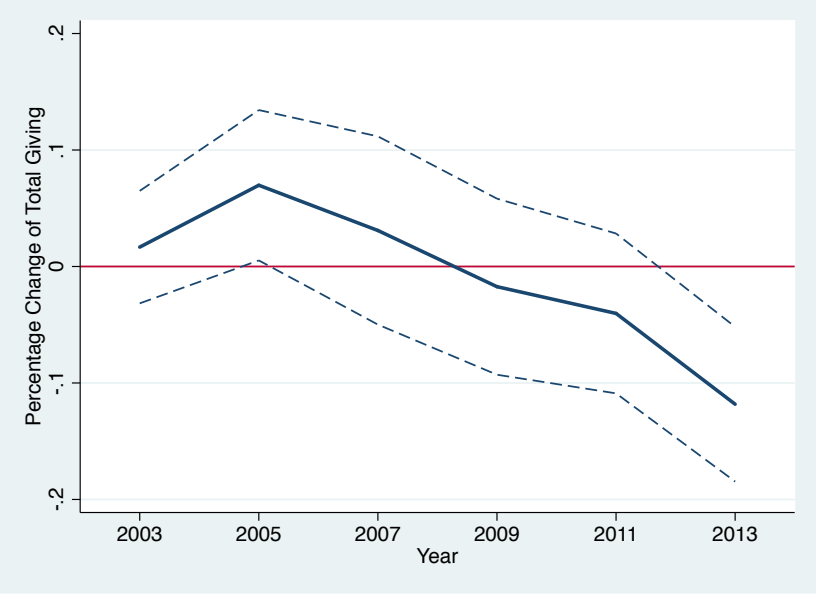

Figure 3.4: OLS, log of giving

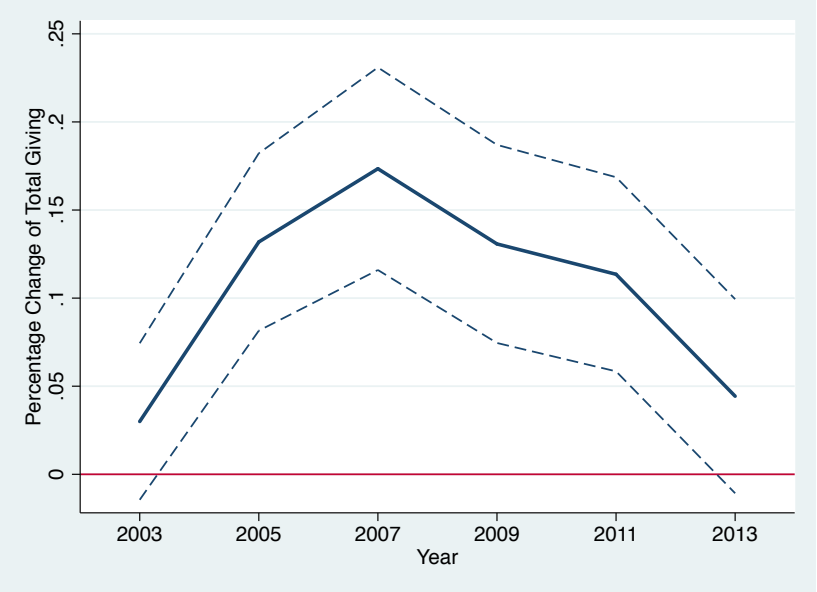

Figure 3.5: OLS, log of giving

For fixed effects, we see the same pattern in every regression. There is a large increase in 2005, and then is stays steady with a slight decrease after the Great Recession. The fourth regression

does not have the large increase and is mostly flat but again this is due to the large amount of demographic controls and it is not very significant. The large increase in giving in 2005 is very interesting and we do not have much in the ways of an explanation. It could be that 2001 and 2003 were an abnormally low years. Again it's difficult to do analysis on conditional giving since the sample changes, but these graphs seem to show that giving levels generally stay steady. The drop at the end could be caused by more marginal givers starting to join back in and being counted in the regression.

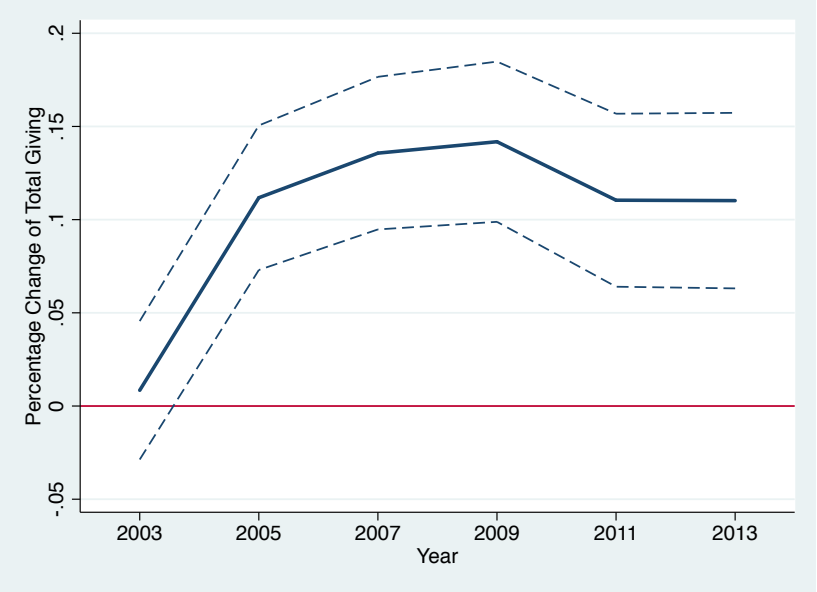

Figure 4.1: Fixed effects, log of giving

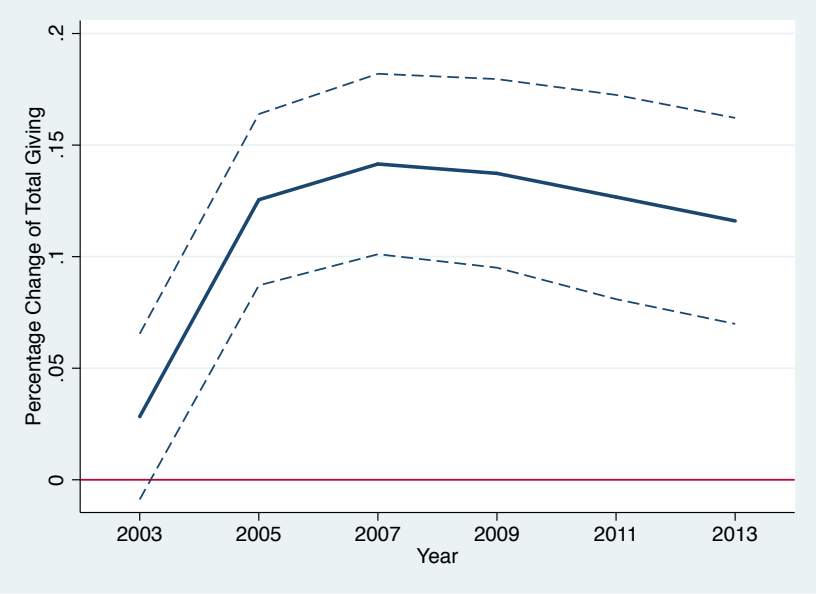

Figure 4.2: Fixed effects, log of giving

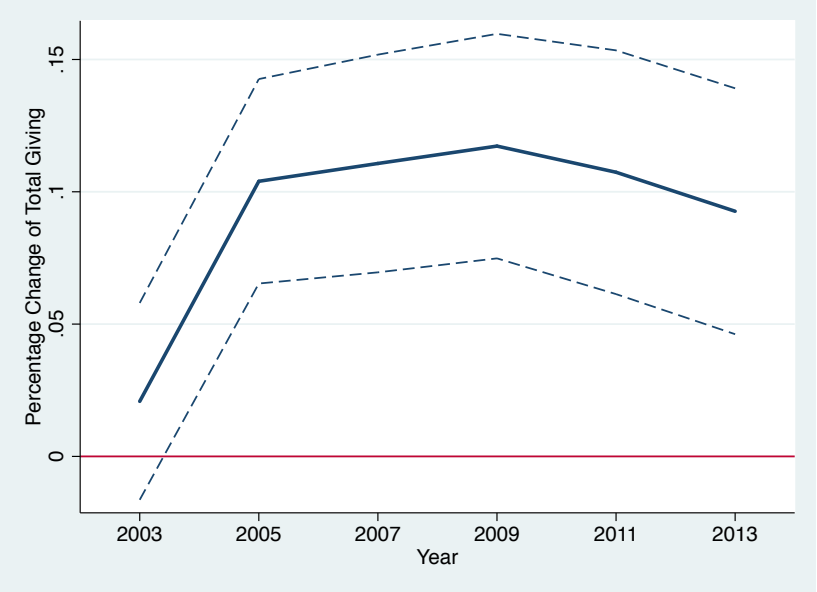

Figure 4.3: Fixed effects, log of giving

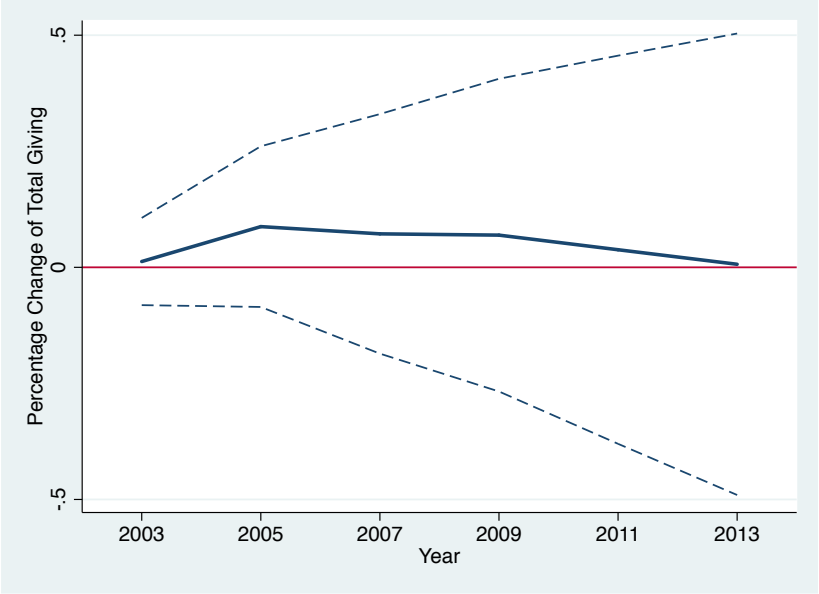

Figure 4.4: Fixed effects, log of giving

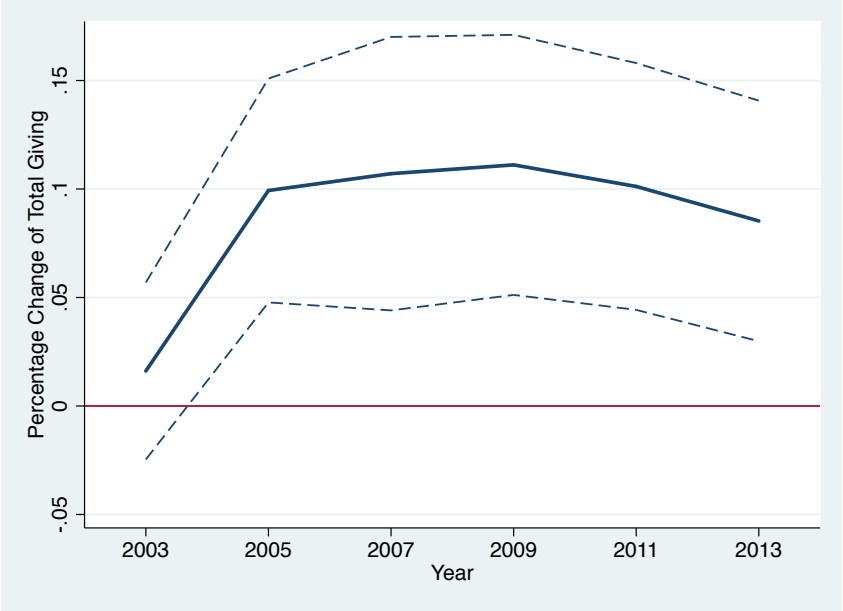

Figure 4.5: Fixed effects, log of giving

Income and wealth both experience diminishing returns both for probability of giving and the log of total giving. Income is generally smoother than wealth. For probability of giving, income has

an increasingly positive effect until $150,000 in income, and then it stays at about that level. Wealth is almost flat for probability of giving past the zero wealth bin. For log of giving, the income gradient is smooth and steadily increases until the $250,000 income level. Wealth has an positive gradient at first and then begins to vary more at the $750,000 level.

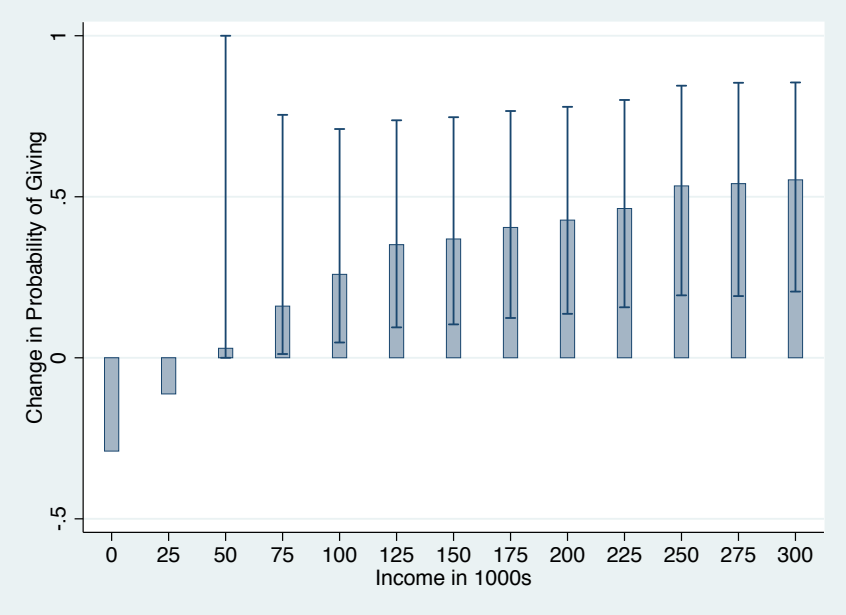

Figure 5.1: Income and Probability of Giving

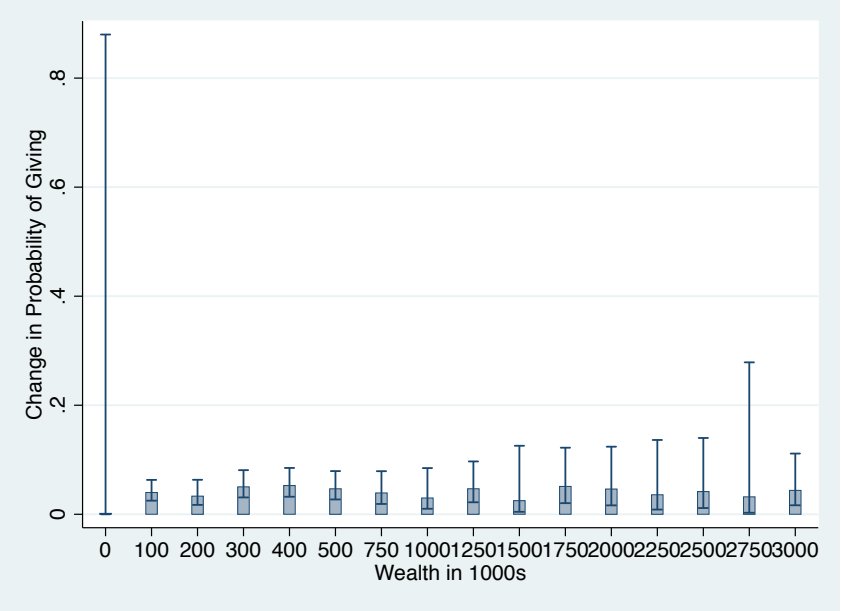

Figure 5.2: Wealth and Probability of Giving

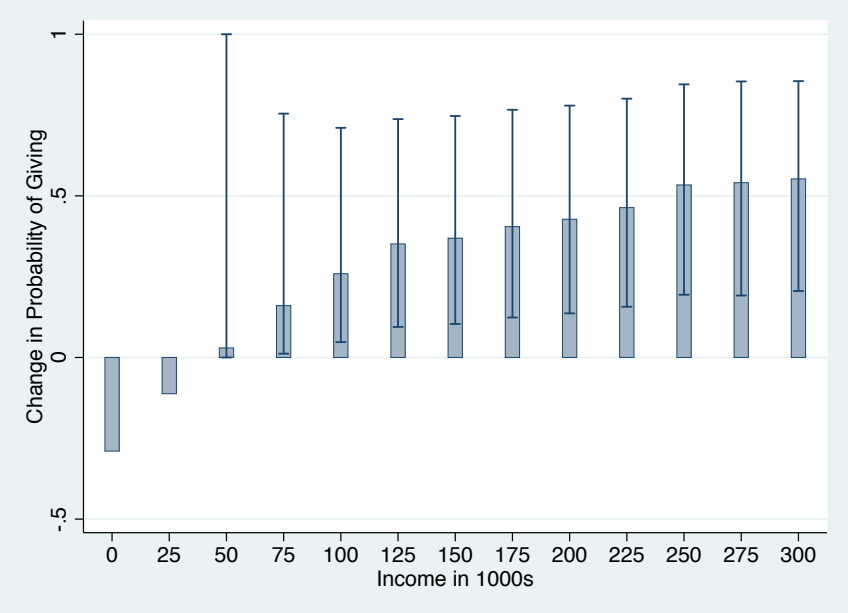

Figure 5.3: Income and Log of Total Giving

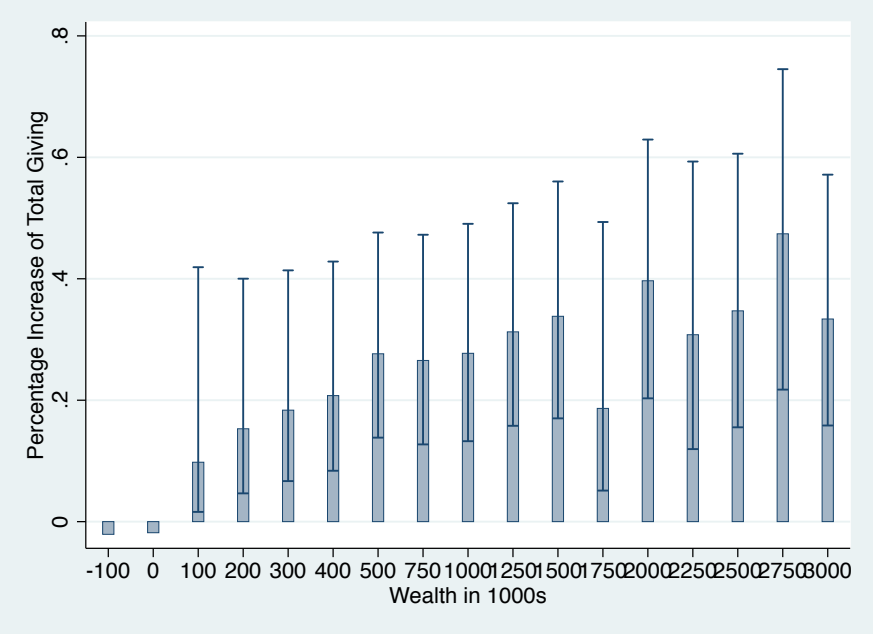

Figure 5.4: Wealth and Log of Total Giving

Religious giving and secular giving exhibit very different patterns over the years of the Great Recession. For the regression, we ran ordinary least squares and fixed effects for the probability of religious giving and the probability of secular giving as well as the logs of both types of giving. We controlled for the year, income, and the religious preference of the head. For probability of giving to a religious organization, we see a peak in 2005 followed by a steady decline, but the probability of secular giving follows the same pattern of just the probability of giving that was shown before, a latent effect of the Great Recession. We think the reason for the faster decline in religious giving is the declining religiosity of Americans (Pew Research Center). The logs of secular and religious giving also contrast interestingly. Religious giving starts to decrease right after the Recession begins and then bottoms out in 2011 and increases again in 2013. Secular giving consistently increases until 2011 and then drops some in 2013. The change in secular giving is much more dramatic than religious giving, which is relatively flat in

comparison to secular giving. It is possible that there is a kind of substitution effect when money becomes scarcer as it does during a recession.

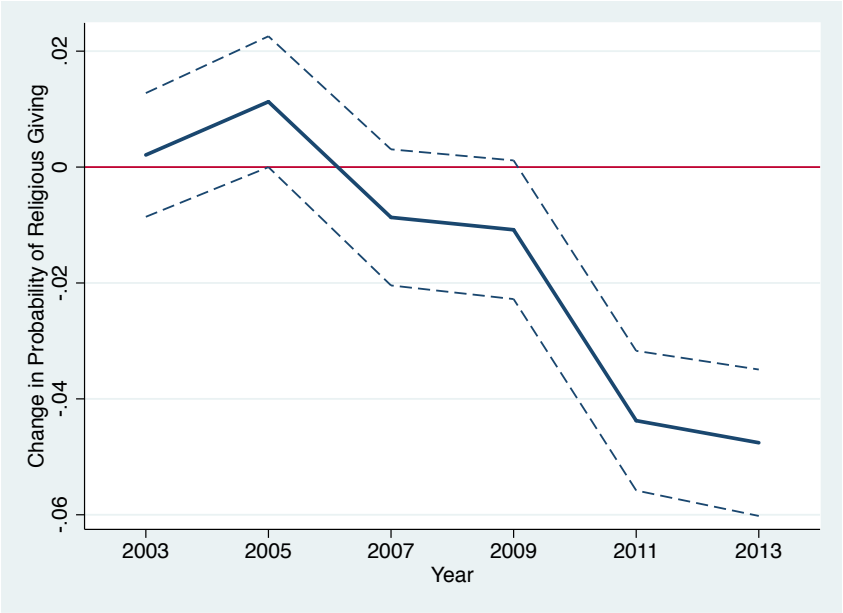

Figure 6.1: Religious Probability of Giving

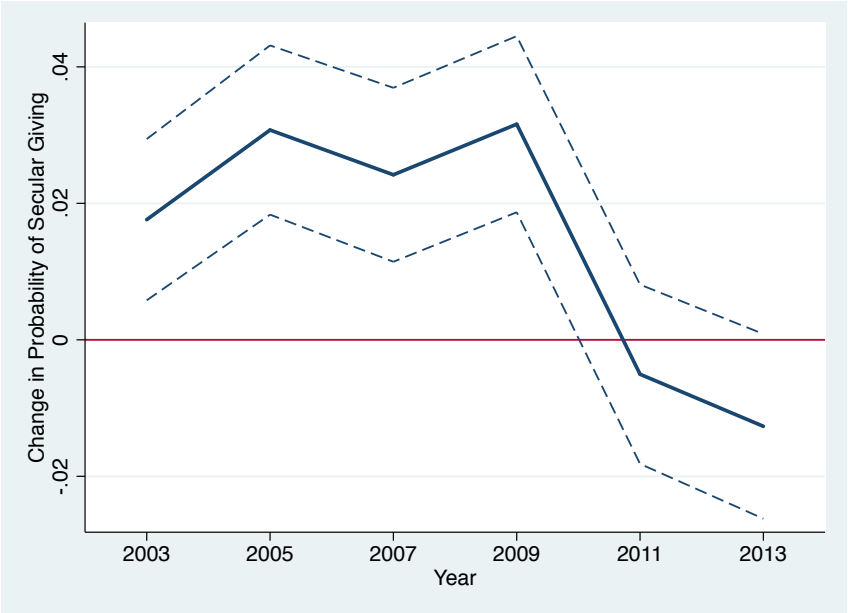

Figure 6.2: Secular Probability of Giving

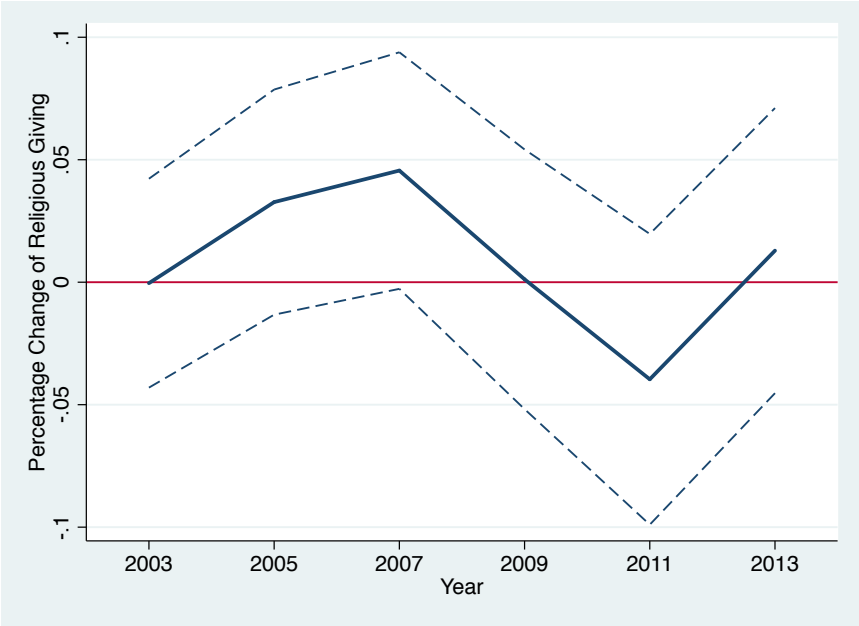

Figure 6.3: Percentage Change of Religious Giving

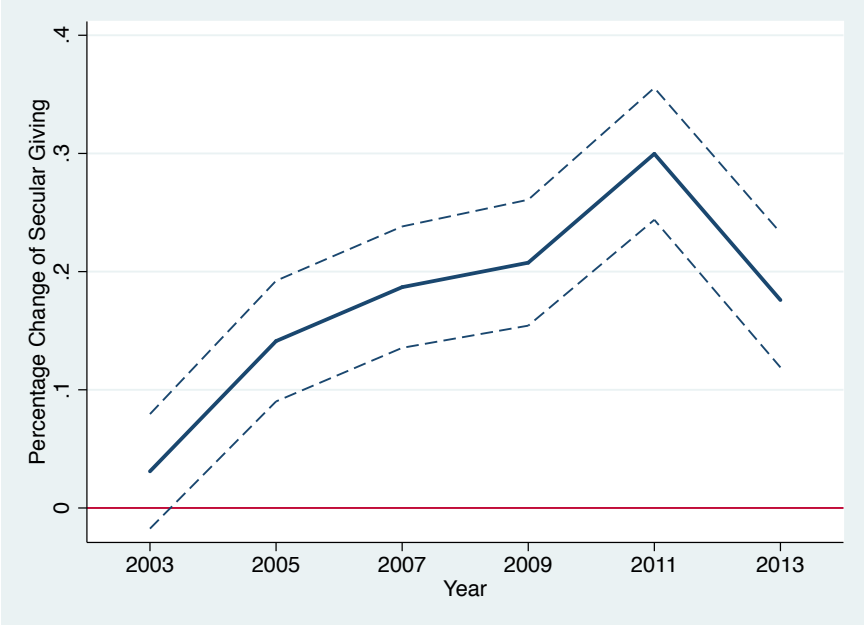

Figure 6.4: Percentage Change of Secular Giving

CHAPTER V

CONCLUSION

Making full use of the Panel Study of Income Dynamics through ordinary least squares and fixed effects regressions, we have shown that the Great Recession had a significant and lasting impact on people's charitable giving behavior. It was observed that there was a latent affect that affected both religious and secular giving. Religious giving has been on the decline for the past decade. Further research on this topic should include analysis of how different types of income affect giving over the period of the Great Recession. There should also be research into more depth how each area of secular giving (education, arts, etc.) were affected by the Great Recession. One could look at giving patterns for people before and after the Great Recession. Such as, if one gives every year before the Great Recession, does the economic crisis affect that generosity and if so how does it. There are many ways to dig deeper into the question since the PSID is such a versatile data set. It will be very fruitful to revisit this question when more years of data have been added into the panel.

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